

CLAIMS

1. A pharmaceutical composition comprising a nucleic acid molecule encoding a tumor-associated antigen and at least one peptide comprising a region corresponding to a putative cytotoxic T cell, helper T cell or B cell epitope of a tumor-associated antigen and/or cells pulsed with such peptide(s).
2. The pharmaceutical composition of claim 1 wherein the tumor-associated antigen encoded by the nucleic acid molecule is heterologous with respect to the species to which the individual belongs to whom the pharmaceutical composition shall be administered.
3. The pharmaceutical composition of claim 1 or 2, which is for administration to humans and in which the nucleic acid molecule encodes a non-human tumor-associated antigen.
4. The pharmaceutical composition of any one of claims 1 to 3, in which the nucleic acid molecule encoding the tumor-associated antigen is under the control of the CMV early promoter.
5. The pharmaceutical composition of any one of claims 1 to 4, in which the nucleic acid molecule is a double stranded circular or linear molecule.
6. The pharmaceutical composition of any one of claims 1 to 5, in which the nucleic acid molecule is naked DNA.
7. The pharmaceutical composition of any one of claims 1 to 6, wherein the tumor-associated antigen is a gp100 protein.
8. The pharmaceutical composition of claim 7, in which the peptide(s) comprise(s) at least one of the following amino acid sequences:
 - (i) KTWGQYWQV (SEQ ID NO:5);
 - (ii) ITDQVPFSV (SEQ ID NO:6);

- (iii) VLYRYGSFSV (SEQ ID NO:7); and
 (iv) KTWGKYWQV (SEQ ID NO:8).

9. The pharmaceutical composition of any one of claims 1 to 8, which comprises more than one peptide comprising a region corresponding to a putative cytotoxic T cell, helper T cell or B cell epitope of a tumor-associated antigen, said peptides having the same or different amino acid sequences.
10. The pharmaceutical composition of any one of claims 1 to 9, which is for the administration to humans and in which the peptide(s) is (are) derived from a non-human tumor-associated antigen.
11. The pharmaceutical composition of any one of claims 1 to 10, in which the peptide-pulsed cells are dendritic cells.
12. The pharmaceutical composition of claim 11, wherein the dendritic cells are derived from the same individual to whom the pharmaceutical composition shall be administered.
13. Use of a nucleic acid molecule encoding a tumor-associated antigen in combination with at least one peptide comprising a region corresponding to a putative cytotoxic T cell, helper T cell or B cell epitope of a tumor-associated antigen and/or cells pulsed in vitro with said at least one peptide for the preparation of a pharmaceutical composition for the treatment or prevention of cancer.
14. The use of claim 13, wherein the tumor-associated antigen is a gp100 protein and the cancer is melanoma.